

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-017622**Date Inspected:** 13-Oct-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 700**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** See Below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG**Summary of Items Observed:**

CWI Inspectors: ZPMC: Mr. Geng Wei ABF: Mr. Shang Qing Quan, Mr. Li Shi You

On this date CALTRANS OSM Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. This QA Inspector observed the following:

OBG Bay 14

This QA Inspector observed ZPMC welder Mr. Hong Yong Li, stencil 044801 used flux cored welding procedure WPS-B-T-2132 to make OBG segment stiffener plate weld AP3003-001-116 and -117 This QA Inspector measured a welding current of approximately 300 amps, 28.0 volts and Mr. Hong Yong Li appeared to be certified to make this weld. This QA Inspector observed the base materials were preheated with electric heaters prior to welding. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC QC Inspector Mr. Guo Wei has recorded that ZPMC welder Mr. Dan Deyin, stencil 044795 has a welding current of 302 amps and 31.0 volts to make stiffener plate welds AP3002-001-004 and -005. This QA Inspector observed that instead of welder stencil 044795 that welder Mr. Chen Chuanzong, stencil 044824 was using flux cored welding procedure WPS-B-T-2132 to make stiffener plate welds AP3002-001-004 and -005. This QA Inspector measured a welding current of approximately 300 amps and 33.5 volts. ZPMC QC Inspector informed this QA Inspector that this welding voltage was too high and that the

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## WELDING INSPECTION REPORT

( Continued Page 2 of 4 )

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maximum welding voltage is 32.5 volts. This QA Inspector observed that the welding machine was adjusted to approximately 29 volts and that Mr. Guo Wei changed his welding document to indicate that welder 044824 was welding instead of 044795. This QA Inspector observed that Mr. Chen Chuanzong appeared to be certified to make this weld. This QA Inspector observed the base materials were preheated with electrical heaters prior to welding. Items observed on this date do not fully appear to comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Wang Jinjiu stencil 043661 used shielded metal arc process to tack weld OBG segment 13CE deck plate DP3104-001 to DP3103-001. ZPMC CWI Mr. Li Shi You did not know the weld number of this joint. This QA Inspector observed Mr. Wang Jinjiu has a welding current of 160 amps and the base materials were preheated with a torch prior to commencement of welding. This QA Inspector observed the shielded metal arc welding electrodes were stored in an electrically heated electrode storage container and it appeared to be connected to the welding power supply cable. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. He Han Qiang, stencil 201981 used flux cored welding procedure WPS-B-T-2231-B-U3-F to make tack welds between OBG segment 14W side plates SP3142C and SP3141C. ABF CWI Mr. Li Shi You informed this QA Inspector that he does not know the weld number of this joint. This QA Inspector observed Mr. He Han Qiang appeared to be certified to make this weld and the base materials were heated with a torch prior to welding. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Tian Zhaoquan, stencil 045246 used shielded metal arc welding procedure specification WPS-B-P-3211-B-U2 to make OBG segment 13AW tack welds between various plates including floor beam FB3188A to SA3178A. This QA Inspector measured a welding current of approximately 170 amps, Mr. Tian Zhaoquan appeared to be certified to make this weld and the base material was preheated with a torch prior to welding. This QA Inspector observed the welding electrodes were stored in a heated portable electrode storage container. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Ms. Hue Junrong, stencil 201215 used flux cored welding procedure WPS-B-T-2132 to make OBG segment 13AW stiffener plate weld SA3168-239. This QA Inspector measured a welding current of approximately 300 amps and 27.0 volts. ABF CWI Mr. Si Shi You informed this QA Inspector that the minimum welding voltage is 28.5 and that the welding voltage is too low. This QA Inspector observed Mr. Hue Junrong adjusting the welding machine voltage to approximately 29 volts. Ms. Hue Junrong appeared to be certified to make this weld and the base materials were preheated with electrical heaters prior to welding. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Zhang Quin Quan, stencil 044774 used flux cored welding procedure WPS-B-T-2232-TC-U4B-F to make stiffener plate weld RS3212A-061. This QA Inspector measured a welding current of approximately 300 amps, 30.5 volts Mr. Zhang Quin Quan appeared to be certified to make this weld. This QA Inspector observed the base materials were preheated with electrical heaters prior to welding. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Zhou Hanjun, stencil 215458 used shielded metal arc procedure

# WELDING INSPECTION REPORT

( Continued Page 3 of 4 )

WPS-B-P-2112-FCM-1 to make tack welds between OBG segment 13E longitudinal diaphragm LD3029A and bottom plate BP3043A welds SEG3011M-188 through -122. This QA Inspector measured a welding current of approximately 160 amps and Mr. Zhou Hanjun appeared to be certified to make this weld. This QA Inspector observed the base material appeared to have been preheated with a torch prior to welding. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Rao Wei, stencil 049972 used shielded metal arc welding procedure specification WPS-B-P-3211-B-U2 to make OBG segment 13BW tack welds between longitudinal diaphragm LD3032 and the bottom plate. This QA Inspector measured a welding current of approximately 160 amps and Mr. Rao Wei appeared to be certified to make this weld. ABF CWI Mr. Li Shi You monitored this welding, the base material was preheated with a torch and the welding electrodes were stored in a portable rod oven which was warm to the touch. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. He Hanbi, stencil 202122 used flux cored welding procedure WPS-B-T-2132 to make OBG segment 13AW stiffener plate weld SA3168-006. This QA Inspector measured a welding current of approximately 320 amps and 30.0 volts. Mr. He Hanbi appeared to be certified to make this weld and the base materials were preheated with electrical heaters prior to welding. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Xi Xianyou, stencil 047866 used flux cored welding procedure WPS-B-T-2132 to make OBG segment 13AW stiffener plate weld SA3168-225. This QA Inspector measured a welding current of approximately 300 amps and 30.7 volts. Mr. Xi Xianyou appeared to be certified to make this weld and the base materials were preheated with electrical heaters prior to welding. Items observed on this date appeared to generally comply with applicable contract documents.



## Summary of Conversations:

See Above.

## Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang phone: 150-0042-2372 , who represents the Office of Structural Materials for your project.

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## WELDING INSPECTION REPORT

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<b>Inspected By:</b>	Dawson,Paul	Quality Assurance Inspector
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<b>Reviewed By:</b>	Carreon,Albert	QA Reviewer
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